UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/583,463	06/19/2006	Yukihiro Kiuchi	W1878.0234	2531

32172 7590 06/24/2009

DICKSTEIN SHAPIRO LLP
1177 AVENUE OF THE AMERICAS (6TH AVENUE)
NEW YORK, NY 10036-2714

EXAMINER	
OJURONGBE, OLATUNDE S	
ART UNIT	**PAPER NUMBER**
1796	

MAIL DATE	DELIVERY MODE
06/24/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/583,463	KIUCHI ET AL.	
	Examiner	Art Unit	
	OLATUNDE S. OJURONGBE	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 April 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicants' submission filed on 04/17/2009 has been entered.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

. **Claims 1-5 and 8-11** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Yamada et al (JP 2003-192925**, see **US 2005/0143502** for English Language equivalent).

Regarding **claims 1 and 5**, Yamada et al teaches a flame-retardant composition [0001, lines 1-2] comprising a biodegradable resin and at least one flame retardant additive [0017]. Yamada et al further teaches that for the biodegradable polymer compound of the invention, aliphatic polyesters are preferred and that among the aliphatic polyesters, more preferred are polylactic acids [0030-0031].
Yamada et al further teaches examples of the flame retardant additive of the invention to include metal hydroxides such as aluminum hydroxide [0038] and exemplifies a composition comprising 48 parts by weight of polylactic acid and 50 parts by weight of aluminum hydroxide [see example 16, Table 5, 0099].

Though Yamada et al does not explicitly teach a flame-retardant thermoplastic resin composition comprising (A) and (B), wherein 90% by mass or more of the flame

retardant (B) is composed of a metal hydrate containing an alkali metal-based substance in an amount of the instant claim, Yamada et al further teaches that in the hydroxide compound preferred as the flame retardant additive used in the invention, more preferred are ones having a purity of about 99.5% or more, because the shelf stability of the composition is improved when using the hydroxide compound having a higher purity. Yamada et al further teaches specific examples of impurities in the hydroxide compounds to include T-Na_2O and S-Na_2O [0045].

Since Yamada et al teaches a correlation between the impurity content of the hydroxide compounds and shelf stability, motivated by the desire to have a composition with an optimal shelf stability, it would have been obvious to one of ordinary skill in the art to have used the aluminum hydroxide of example 16 of Yamada et al at various purity levels, including 99.82% or more.

The aluminum hydroxide of Yamada et al with a purity level of 99.82% or more has a T-Na_2O and/or S-Na_2O content of 0.18% by weight of less.

The statement “at least a plant-derived resin” is a product-by-process limitation; even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.

Weight and Mass are conventional measurements that are used interchangeably in the art.

Regarding **claims 2,4,9 and 11**, Yamada et al teaches a flame-retardant composition [0001, lines 1-2] comprising a biodegradable resin and at least one flame retardant additive [0017]. Yamada et al further teaches that for the biodegradable polymer compound of the invention, aliphatic polyesters are preferred and that among the aliphatic polyesters, more preferred are polylactic acids [0030-0031].
Yamada et al further teaches examples of the flame retardant additive of the invention to include inorganic flame retardant compounds that include metal hydroxides such as aluminum hydroxide [0038] and organic flame retardant compounds such as bisphenol A and silica [0041]. Yamada et al further teaches the use of the silica compound of the invention in an amount of 5 to 40% by weight [0048] and exemplifies a composition comprising 48 parts by weight of polylactic acid and 50 parts by weight of aluminum hydroxide [see example 16, Table 5, 0099].

Though Yamada et al does not explicitly teach a flame-retardant thermoplastic resin composition comprising (A),(B) and (C), wherein the weight proportions of the individual components in the flame-retardant thermoplastic resin composition are that of the instant claim and 90% by mass or more of the flame retardant (B) is composed of a metal hydrate containing an alkali metal-based substance in an amount of the instant claim, Yamada et al further teaches that in the hydroxide compound preferred as the flame retardant additive used in the invention, more preferred are ones having a purity of about 99.5% or more because the shelf stability of the composition is improved when using the hydroxide compound having a higher purity. Yamada et al further teaches

specific examples of impurities in the hydroxide compounds of the invention to include T-Na_2O and S-Na_2O [0045]. Since Yamada et al teaches a correlation between the impurity content of the hydroxide compounds and shelf stability, motivated by the desire to have a composition with an optimal shelf stability, it would have been obvious to one of ordinary skill in the art to have used the aluminum hydroxide of example 16 of Yamada et al at various purity levels, including 99.82% or more.

Furthermore, since Yamada et al teaches silica and compounds containing bisphenol A as equivalents, one of ordinary skill in the art would have incorporated the silica and/or the compounds containing bisphenol A of Yamada et al into the composition of example 16 of Yamada et al, at the taught amount of the silica, by routine experimentation with an expectation of success.

The aluminum hydroxide of Yamada et al with a purity level of 99.82% or more has a T-Na_2O and/or S-Na_2O content of 0.18% by weight of less.

Compounds containing bisphenol A of Yamada et al serves as the aromatic ring-containing compound (C) of the instant claim.

The statement “at least a plant-derived resin” is a product-by-process limitation; even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.

Weight and Mass are conventional measurements that are used interchangeably in the art.

Regarding **claims 3,8 and 10**, Yamada et al teaches a flame-retardant composition [0001, lines 1-2] comprising a biodegradable resin and at least one flame retardant additive [0017]. Yamada et al further teaches that for the biodegradable polymer compound of the invention, aliphatic polyesters are preferred and that among the aliphatic polyesters, more preferred are polylactic acids [0030-0031].
Yamada et al further teaches examples of the flame retardant additive of the invention to include inorganic flame retardant compounds that include metal hydroxides such as aluminum hydroxide [0038] and organic flame retardant compounds such as bisphenol A and silica [0041]. Yamada et al further teaches the use of the silica compound of the invention in an amount of 5 to 40% by weight [0048].
Yamada et al further teaches examples of flame retardant compounds of the invention to include phosphorus flame retardant compounds such as phosphoric esters and ammonium polyphosphate [0037] and further teaches the use of ammonium polyphosphate in an amount of 1 to 25% by weight [0048].
Yamada et al further exemplifies a composition comprising 48 parts by weight of polylactic acid and 50 parts by weight of aluminum hydroxide [see example 16, Table 5, 0099].

Though Yamada et al does not explicitly teach a flame-retardant thermoplastic resin composition comprising (A),(B),(C) and (D), wherein the weight proportions of the

individual components in the flame-retardant thermoplastic resin composition are that of the instant claim and 90% by mass or more of the flame retardant (B) is composed of a metal hydrate containing an alkali metal-based substance in an amount of the instant claim, Yamada et al further teaches that in the hydroxide compound preferred as the flame retardant additive used in the invention, more preferred are ones having a purity of about 99.5% or more because the shelf stability of the composition is improved when using the hydroxide compound having a higher purity. Yamada et al further teaches specific examples of impurities in the hydroxide compounds of the invention to include T-Na_2O and S-Na_2O [0045]. Since Yamada et al teaches a correlation between the impurity content of the hydroxide compounds and shelf stability, motivated by the desire to have a composition with an optimal shelf stability, it would have been obvious to one of ordinary skill in the art to have used the aluminum hydroxide of example 16 of Yamada et al at various purity levels, including 99.82% or more.

Furthermore, since Yamada et al teaches silica and compounds containing bisphenol A as equivalents, one of ordinary skill in the art would have incorporated the silica and/or the compounds containing bisphenol A of Yamada et al into the composition of example 16 of Yamada et al, at the taught amount of the silica, by routine experimentation with an expectation of success.

Thirdly, since Yamada et al teaches ammonium polyphosphate and phosphoric esters as equivalents, one of ordinary skill in the art would have incorporated the ammonium polyphosphate and/or the phosphoric esters of Yamada et al into the composition of

example 16 of Yamada et al, at the taught amount of the ammonium polyphosphate, by routine experimentation with an expectation of success.

The aluminum hydroxide of Yamada et al with a purity level of 99.82% or more has a T-Na_2O and/or S-Na_2O content of 0.18% by weight of less.

Compounds containing bisphenol A of Yamada et al serves as the aromatic ring-containing compound (C) of the instant claim.

The statement "at least a plant-derived resin" is a product-by-process limitation; even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.

Weight and Mass are conventional measurements that are used interchangeably in the art.

7. **Claims 6 and 12-15** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Yamada et al (JP 2003-192925**, see **US 2005/0143502** for English Language equivalent) as applied to claims 1-5 respectively, in view of **Shiping (US 2002/0099160).**

Regarding **claims 6 and 12-15**, Yamada et al teaches all the claim limitations as set forth above and further teaches the flame-retardant thermoplastic resin composition

further comprising reinforcement, examples of which include Teflon [0059]. Teflon is a registered trademark for polytetrafluoroethylene.

Though modified Yamada et al does not teach the flame-retardant thermoplastic composition further comprising (E) in a weight proportion of the instant claim, Yamada et al further teaches that additives, including Teflon (polytetrafluoroethylene) can be added to the thermoplastic resin composition in an amount such that the desired effect of the composition of the invention is not sacrificed [0058, lines 1-4].

Shiping teaches a flame retardant resin composition comprising polycarbonate resin and thermoplastic resin other than polycarbonate group (abstract). Shiping further teaches the composition of the invention comprising anti-drip agent (D) and further teaches that an anti-drip serves to inhibit dripping during burning [0134-0138].

Shipping further exemplifies a composition comprising 0.5 weight parts PTFE per 100 parts of the thermoplastic resin [see Example 1, 0173].

Since the compositions of Shiping and Yamada et al are similar and both compositions are in the same field of endeavor-flame retardant compositions-motivated by the taught advantages of polytetrafluoroethylene as an anti-drip agent, it would have been obvious to one of ordinary skill in the art to have used the Teflon of Yamada et al, at the exemplified amount of Shipping et al.

8. **Claims 1-4, 7-8 and 16-18** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Imahashi et al (US 2003/0162011).**

Regarding **claim 1**, Imahashi et al teaches a composition containing 100 parts by weight of a resin and 5 to 200 parts by weight of a metal hydroxide [0008], wherein said resin include thermoplastic resins such as polycarbonate, polyester and cellulose resin [0014] and said metal hydroxide has a water-soluble sodium salt content of 1,000 ppm or less [0019].

Imahashi et al further exemplifies a composition comprising 75 parts by weight of resin and 65 parts by weight of magnesium hydroxide [see A-2, TABLE 1, 0083].

The metal hydroxide having a water-soluble sodium salt content of 1,000 ppm or less, exemplified as 65 parts by weight of magnesium hydroxide, serves as the flame-retardant (B) of the instant claim.

Though Imahashi et al does not explicitly teach a flame-retardant thermoplastic resin composition comprising at least a plant derived resin (A) and a flame retardant (B), wherein the weight proportions of the individual components are those of the instant, since Imahashi et al teaches metallocene LLDPE, EVA resin, cellulose resin and polyester as equivalents, it would have been obvious to one of ordinary skill in the art to have used either one or both of cellulose resin and polyester resin as the resin of composition A-2 of Imahashi et al.

The statement “at least a plant-derived resin” is a product-by-process limitation; even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-

process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.

Weight and Mass are conventional measurements that are used interchangeably in the art.

Regarding **claim 2**, Imahashi et al teaches a composition containing 100 parts by weight of a resin and 5 to 200 parts by weight of a metal hydroxide [0008], wherein said resin includes thermoplastic resins such as polycarbonate and polyester [0014] and said metal hydroxide has a water-soluble sodium salt content of 1,000 ppm or less [0019].

Imahashi et al further teaches the composition of the invention comprising additives, reinforcing material and filler [0031].

Imahashi et al further exemplifies a composition comprising 75 parts by weight of resin, 65 parts by weight of magnesium hydroxide and 0.1 parts by weight of Irganox 1010 [see A-2, TABLE 1, 0083].

The metal hydroxide having a water-soluble sodium salt content of 1,000 ppm or less, exemplified as 65 parts by weight of magnesium hydroxide, serves as the flame-retardant (B) of the instant claim.

The antioxidant of Imahashi et al exemplified as Irganox 1010, serves as component (C) of the instant claim.

Though Imahashi et al does not explicitly teach a flame-retardant thermoplastic resin composition comprising (A), (B) and (C), wherein the weight proportions of the individual components are those of the instant, since Imahashi et al teaches metallocene LLDPE,

EVA resin, cellulose resin and polyester as equivalents, it would have been obvious to one of ordinary skill in the art to have used either one or both of cellulose resin and polyester resin as the resin of composition A-2 of Imahashi et al.

Furthermore, motivated by the desire to have a composition with an optimal antioxidative property, one of ordinary skill in the art would have used the Irganox 1010 of the composition A-2 of Imahashi et al at various amounts, including the 0.5=<Y=<20 of the instant claim.

The statement “at least a plant-derived resin” is a product-by-process limitation; even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production, if the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.

Weight and Mass are conventional measurements that are used interchangeably in the art.

Regarding **claim 3**, Imahashi et al teaches a composition containing 100 parts by weight of a resin and 5 to 200 parts by weight of a metal hydroxide [0008] , wherein said resin includes thermoplastic resins such as polycarbonate and polyester [0014] and said metal hydroxide has a water-soluble sodium salt content of 1,000 ppm or less [0019]. Imahashi et al further teaches the composition of the invention comprising pigment [0029], additives, reinforcing material and filler [0031].

Imahashi et al further exemplifies a composition comprising 75 parts by weight of resin, 65 parts by weight of magnesium hydroxide, 0.1 parts by weight of Irganox 1010 and 4 parts by weight of carbon black [see A-2, TABLE 1, 0083].

The metal hydroxide having a water-soluble sodium salt content of 1,000 ppm or less, exemplified as 65 parts by weight of magnesium hydroxide, serves as the flame-retardant (B) of the instant claim.

The antioxidant of Imahashi et al, exemplified as Irganox 1010, serves as component (C) of the instant claim.

The pigment of Imahashi et al, exemplified as carbon black, serves as component (D) of the instant claim.

Though Imahashi et al does not explicitly teach a flame-retardant thermoplastic resin composition comprising (A), (B), (C), and (D), wherein the weight proportions of the individual components are those of the instant, since Imahashi et al teaches metallocene LLDPE, EVA resin, cellulose resin and polyester as equivalents, it would have been obvious to one of ordinary skill in the art to have used either one or both of cellulose resin and polyester resin as the resin of composition A-2 of Imahashi et al. Furthermore, motivated by the desire to have a composition with an optimal antioxidative property, one of ordinary skill in the art would have used the Irganox 1010 of the composition A-2 of Imahashi et al at various amounts, including the 0.5=<Y=<20 of the instant claim.

The statement “at least a plant-derived resin” is a product-by-process limitation; even though product-by-process claims are limited by and defined by the process,

determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production, if the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.
Weight and Mass are conventional measurements that are used interchangeably in the art.

Regarding **claims 4 and 8**, the Irganox 1010 of Imahashi et al is a phenol.

Regarding **claims 7, 16-18**, Imahashi et al teaches all the claim limitations as set forth above and further teaches the composition of the invention comprising additive, reinforcing material and filler, examples of which includes carbon fiber [0031], and exemplifies the additives, reinforcing material and filler of the invention in an amount of 0.3 parts by weight [see antioxidant, photostabilizer and ultraviolet absorbent, 0083]. Though Imahashi et al does not explicitly teach the flame-retardant thermoplastic resin composition comprising (F) in a weight proportion of the instant claim, since Imahashi et al exemplifies the antioxidant, photostabilizer and ultraviolet absorbent, which are examples of additives, reinforcing material and filler of the invention in an amount of 0.1 parts by weight respectively, one of ordinary skill in the art would have incorporated the taught carbon fiber of Imahashi et al into the exemplified composition of the invention of Imahashi et al in an amount of 0.1 parts by weight by routine experimentation with an expectation of success.

9. **Claims 5, 9-11 and 19** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Imahashi et al (US 2003/0162011)** in view of **Yamada et al (JP 2003-192925,** see **US 2005/0143502** for English Language equivalent**).**

Regarding **claims 5 and 9-11** Imahashi et al teaches all the claim limitations as set forth above.

Imahashi et al does not teach the flame-retardant thermoplastic resin composition wherein the plant-derived resin (A) is a polylactic acid resin of the instant claim.

Yamada et al teaches a thermoplastic resin composition that comprises one or a plurality of organic polymer and a flame retardant additive which includes a hydroxide compound having a purity of 99.5% or more [0012-0018]. Yamada et al further teaches that of with respect to the organic polymer of the invention, a biodegradable resin is preferred, of which polylactic acids are more preferred [0030-0031] and exemplifies compositions comprising polylactic acid [see Examples 1-8, TABLE 1, 0078].

Yamada et al further teaches that the composition of the invention is biodegradable, flame-retardant, has mechanical strength and produces less adverse impact on the environment when disposed [0007].

Since both inventions of Yamada et al and Imahashi et al are in the same field of endeavor-flame retardant composition-motivated by the taught advantages of the organic polymer of Yamada et al, it would have been obvious to one of ordinary skill in the art to have incorporated any of the taught organic polymer of Yamada et al,

including polylactic acids resin, into the composition of Imahashi et al, as the thermoplastic resin.

Regarding **claim 19**, modified Imahashi et al teaches all the claim limitations as set forth above and further teaches the composition of the invention comprising additive, reinforcing material and filler, examples of which includes carbon fiber [0031], and exemplifies the additives, reinforcing material and filler of the invention in an amount of 0.3 parts by weight [see antioxidant, photostabilizer and ultraviolet absorbent, 0083]. Though Imahashi et al does not explicitly teach the flame-retardant thermoplastic resin composition comprising (F) in a weight proportion of the instant claim, since Imahashi et al exemplifies the antioxidant, photostabilizer and ultraviolet absorbent , which are examples of additives, reinforcing material and filler of the invention in an amount of 0.1 parts by weight respectively, one of ordinary skill in the art would have incorporated the taught carbon fiber of Imahashi et al into the exemplified composition of the invention of Imahashai et al in an amount of 0.1 parts by weight, by routine experimentation with an expectation of success.

10. **Claims 6, 12-14 and 20** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Imahashi et al (US 2003/0162011)** in view of **Shiping (US 2002/0099160).**

Regarding **claim 6 and 12-14**, Imahashi et al teaches all the claim limitations as set forth above. Imahashi et al does not teach the flame-retardant thermoplastic resin

composition further comprising a drip-proof agent (E) in a weight proportion of the instant claim.

Shiping teaches a flame retardant resin composition comprising polycarbonate resin and thermoplastic resin other than polycarbonate group (abstract). Shiping further teaches the composition of the invention comprising anti-drip agent (D) and further teaches that an anti-drip serves to inhibit dripping during burning [0134-0138].

Shipping further exemplifies a composition comprising 0.5 weight parts PTFE per 100 parts of the thermoplastic resin [see Example 1, 0173].

Since the compositions of Shiping and Imahashi et al are similar and both compositions are in the same field of endeavor-flame retardant compositions-motivated by the advantages of the anti-drip agent of Shiping, it would have been obvious to one of ordinary skill in the art to have incorporated any of the anti-drip agent of Shiping, including the exemplified PTFE, at the exemplified amount, into the composition of Imahashi et al.

Regarding **claim 20**, modified Imahashi et al teaches all the claim limitations as set forth above and further teaches the composition of the invention comprising additive, reinforcing material and filler, examples of which includes carbon fiber [0031], and exemplifies the additives, reinforcing material and filler of the invention in an amount of 0.3 parts by weight [see antioxidant, photostabilizer and ultraviolet absorbent, 0083]. Though Imahashi et al does not explicitly teach the flame-retardant thermoplastic resin composition comprising (F) in a weight proportion of the instant claim, since Imahashi et

al exemplifies the antioxidant, photostabilizer and ultraviolet absorbent , which are examples of additives, reinforcing material and filler of the invention in an amount of 0.1 parts by weight each, one of ordinary skill in the art would have incorporated the taught carbon fiber of Imahashi et al into the exemplified composition of the invention in an amount of 0.1 parts by weight by routine experimentation with an expectation of success.

11. **Claim 15** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Imahashi et al (US 2003/0162011)** in view of **Yamada et al (JP 2003-192925,** see **US 2005/0143502** for English Language equivalent**)** in further view of **Shiping (US 2002/0099160).**

Regarding **claim 15**, modified Imahashi et al teaches all the claim limitations as set forth above. Modified Imahashi et al does not teach the flame-retardant thermoplastic resin composition further comprising a drip-proof agent (E) in a weight proportion of the instant claim.

Shiping teaches a flame retardant resin composition comprising polycarbonate resin and thermoplastic resin other than polycarbonate group (abstract). Shiping further teaches the composition of the invention comprising anti-drip agent (D) and further teaches that an anti-drip serves to inhibit dripping during burning [0134-0138].

Shipping further exemplifies a composition comprising 0.5 weight parts PTFE per 100 parts of the thermoplastic resin [see Example 1, 0173].

Since the compositions of Shiping and modified Imahashi et al are similar and both compositions are in the same field of endeavor-flame retardant compositions-motivated by the advantages of the anti-drip agent of Shiping, it would have been obvious to one of ordinary skill in the art to have incorporated any of the anti-drip agent of Shiping-including the exemplified PTFE at the exemplified amount- into the composition of modified Imahashi et al.

Response to Arguments

12. Applicants' arguments filed on 04/17/2009 have been fully considered but they are not persuasive.

The applicants argue that there is no teaching or suggestion in the reference (Yamada et al) that there is any shelf stability increase at purity levels above 99.5% and that nothing in Yamada teaches or suggests that the stability would be any different at a purity of 99.6% rather than 99.5%. The examiner disagrees.

Firstly, Yamada teaches a purity level of 99.5% or more, this level encompasses all purity level above 99.5%, including a purity level of 99.6% that the applicants argue. Moreover, purer forms of known products may be patentable, but the mere purity of a product, by itself, does not render the product unobvious. *Ex parte Gray*, 10 USPQ2d 1922 (Bd. Pat. App. & Inter. 1989).

The applicants further argue that nothing in Yamada teaches or suggests that the amount of alkali metal based substance contained in the metal hydrate purity level

effects the fire retardancy. The applicants further cite Tables 1 and 3-10 and Figure 1 of the present application to show unexpected results. The examiner disagrees.

As pointed out in the advisory action, the evidence used to show unexpected results does not commensurate in scope with the claims of the application. The polylactic acid resin and aluminum hydroxide of the evidence are far more limiting than the broader plant-derived resin (A) and metal hydrate of the instant claims respectively.

Moreover, the alkali metal-based substance in an amount of 0.18% by mass or less of the instant claims is far broader than the cited percent by mass of the sodium oxide of the evidence.

The applicants' arguments have failed to put the application in condition for allowance.

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to OLATUNDE S. OJURONGBE whose telephone number is (571)270-3876. The examiner can normally be reached on Monday-Thursday, 7.15am-4.45pm, EST time, Alt Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on (571)272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

O.S.O.

/Randy Gulakowski/
Supervisory Patent Examiner, Art Unit 1796